

CLAIMS:

1. An isolated peptide comprising a helper T cell epitope portion and a B cell epitope portion, wherein said helper T cell epitope portion comprises a broad range helper T cell epitope and said B cell epitope portion comprises a B cell epitope of CETP.
2. The isolated peptide according to claim 1 wherein said B cell epitope portion comprises a portion of human CETP consisting of at least 6 consecutive amino acids of SEQ ID NO:4 and which are recognized by B cells or antibodies.
3. The isolated peptide according to claim 1 wherein said B cell epitope of CETP is selected from the group consisting of the amino acid sequence defined by amino acids 349 to 367 of SEQ ID NO:4, amino acids 461 to 476 of SEQ ID NO:4; amino acid sequences identified by antigenic epitope identifying algorithms, a region involved in neutral lipid binding, a region involved in neutral lipid transfer activity.
4. The isolated peptide according to claim 1 wherein the helper T cell epitope portion comprises a helper T cell epitope derived from an antigenic peptide selected from the group consisting of tetanus toxoid, diphtheria toxoid, pertussis vaccine, Bacille Calmette-Guerin (BCG), polio vaccine, measles vaccine, mumps vaccine, rubella vaccine, purified protein derivative of tuberculin, keyhole limpet hemocyanin, hsp70, and combinations thereof.
5. The isolated peptide according to claim 2 wherein the B cell epitope portion is a peptide consisting of between six and 26 consecutive amino acids of the carboxyl terminal 26 amino acids of human CETP (SEQ ID NO:1).
6. The isolated peptide according to claim 2, wherein said B cell epitope portion is a derivative of CETP having neutral lipid binding or neutral lipid transfer activity.

7. The isolated peptide according to claim 1 having an amino terminal cysteine residue.
8. The isolated peptide according to claim 1 comprising the amino acid sequence of SEQ ID NO:2.
9. A vaccine comprising a vaccine peptide, said vaccine peptide comprising a universal helper T cell epitope portion linked to a B cell epitope portion, said B cell epitope portion comprising a B cell epitope of a CETP.
10. The vaccine according to claim 9 wherein the T cell epitope portion of the vaccine peptide comprises a helper T cell epitope derived from an antigenic peptide selected from the group consisting of tetanus toxoid, diphtheria toxoid, pertussis vaccine, Bacille Calmette-Guerin (BCG), polio vaccine, measles vaccine, mumps vaccine, rubella vaccine, purified protein derivative of tuberculin, keyhole limpet hemocyanin, hsp70, and combinations thereof.
11. The vaccine according to claim 9 wherein the helper T cell epitope portion of the vaccine peptide comprises a helper T cell epitope selected from the group consisting of the amino acid sequence of amino acids 830 to 843 of tetanus toxin protein (amino acids 2 to 15 of SEQ ID NO:2), the amino acid sequence of amino acids 947 to 967 of tetanus toxin protein (SEQ ID NO:3), and combinations thereof.
12. The vaccine according to claim 9 wherein the CETP is human CETP.
13. The vaccine according to claim 12 wherein the B cell epitope portion of said vaccine peptide comprises a B cell epitope of human CETP selected from the group consisting of between six and 26 consecutive amino acids of the carboxyl terminal 26 amino acids of human CETP (SEQ ID NO:1).
14. The vaccine according to claim 9 wherein the vaccine peptide further

comprises an amino terminal cysteine residue.

15. The vaccine according to claim 9 further comprising a vaccine peptide covalently linked to multiple copies of complement protein C3d.

16. The vaccine according to claim 9 further comprising a vaccine peptide derivatized with carbohydrate structures which become covalently linked *in vivo* with complement protein C3d.

17. A method of elevating the ratio of circulating HDL to circulating LDL, VLDL, or total cholesterol in a human or other animal comprising administering to the human or animal a vaccine composition comprising a vaccine peptide comprising a helper T cell epitope portion and a B cell epitope portion, wherein said B cell epitope portion comprises a B cell epitope of a CETP of said human or other animal.

18. The method according to claim 17 wherein said B cell epitope portion comprises a carboxyl terminal region of CETP involved in neutral lipid binding or neutral lipid transfer activity.

19. The method according to claim 17 wherein the helper T cell epitope portion of the vaccine peptide comprises a T cell epitope selected from the group consisting of the amino acid sequence of amino acids 830 to 843 of tetanus toxin protein (amino acids 2 to 16 of SEQ ID NO:2) and the amino acid sequence of amino acids 947 to 967 of tetanus toxin protein of SEQ ID NO:3.

20. The method according to claim 17 wherein the B cell epitope portion of the vaccine peptide is selected from the group consisting of between six and 26 consecutive amino acids of SEQ ID NO:1.

21. The method according to claim 17 wherein the vaccine peptide further comprises an amino terminal cysteine residue.

22. A method of decreasing the level of endogenous CETP activity in a human or other animal comprising administering to the human or animal a vaccine peptide comprising a helper T cell epitope portion linked to a B cell epitope portion comprising a B cell epitope of a CETP of a human or animal.

23. The method according to claim 22 wherein the vaccine peptide is administered in an amount sufficient to elicit production in said human or other animal of anti-CETP antibodies.

24. A method of altering the catabolism of HDL-cholesterol to decrease the development of atherosclerotic lesions in a human or other animal comprising administering to the human or animal a vaccine peptide comprising a helper T cell epitope portion linked to a B cell epitope portion, said helper T cell epitope portion comprising a broad range T cell epitope and said B cell epitope portion comprising a B cell epitope of CETP.

25. A method of increasing the level of circulating HDL in a human or other animal comprising administering to the human or animal a vaccine peptide comprising a helper T cell epitope portion and a B cell epitope portion, wherein said B cell epitope portion comprises a B cell epitope of a CETP of said human or other animal.

26. The method according to claim 25, wherein the helper T cell epitope portion comprises a helper T cell epitope derived from an antigenic peptide selected from the group consisting of tetanus toxoid, diphtheria toxoid, pertussis vaccine, Bacille Calmette-Guerin (BCG), polio vaccine, measles vaccine, mumps vaccine, rubella vaccine, purified protein derivative of tuberculin, keyhole limpet hemocyanin, and combinations thereof.

27. The method according to claim 25, wherein the B cell epitope portion comprises a carboxyl terminal region of human CETP consisting of between six and 26 consecutive amino acids of SEQ ID NO:1.

28. A method for therapeutically or prophylactically treating atherosclerosis in a human or other animal in need of treatment thereof comprising administering to said human or other animal a vaccine peptide in a pharmaceutically acceptable buffer, said vaccine peptide comprising a helper T cell epitope portion comprising a helper T cell epitope and a B cell epitope portion comprising a B cell epitope of CETP.

29. The method for treating atherosclerosis according to claim 28 wherein said helper T cell epitope portion comprises a helper T cell epitope derived from an antigenic peptide selected from the group consisting of tetanus toxoid, diphtheria toxoid, pertussis vaccine, Bacille Calmette-Guerin (BCG), polio vaccine, measles vaccine, mumps vaccine, rubella vaccine, purified protein derivative of tuberculin, keyhole limpet hemocyanin, hsp70, and combinations thereof.

30. A method of making an anti-CETP vaccine to modulate endogenous CETP activity or to treat therapeutically or prophylactically atherosclerosis, comprising:

selecting a B cell epitope of CETP wherein said B cell epitope does not include a major histocompatibility complex class I T cell epitope;

selecting a helper T cell epitope derived from an antigenic peptide which is not derived from CETP; and

linking said B cell epitope of CETP and said helper T cell epitope to form an immunogenic moiety.

31. The method according to claim 30 wherein said B cell epitope portion is covalently linked to said helper T cell epitope.

32. The method according to claim 30, wherein said B cell epitope portion is covalently linked to said helper T cell epitope via a covalent bond selected from the group consisting of peptide bonds and disulfide bonds.

33. The method according to claim 30 wherein said B cell epitope portion is linked to said helper T cell epitope via a cross-linker molecule.

34. The method according to claim 30 wherein said B cell epitope portion is linked to said helper T cell epitope via a bridge of amino acids.
35. The method according to claim 30 wherein said B cell epitope portion and said helper T cell epitope are linked to a common carrier molecule.
36. The method according to claim 30 wherein said B cell epitope portion is linked to said helper T cell epitope to form a vaccine peptide and further comprising the step of linking said vaccine peptide to a common carrier molecule.